# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/028,010 | 12/21/2001 | Steven R. Soltis | 2451 | 2392 |

7590          09/19/2005

Beck & Tysver, P.L.L.C.
Suite 100
2900 Thomas Avenue South
Minneapolis, MN  55416

| EXAMINER |
|---|
| PATEL, CHIRAG R |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2141 | |

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 December 2001*.

2a)☐ This action is **FINAL**.      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-55* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All    b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

## *Information Disclosure Statement*

The IDS statement by applicant states the application number is 10/028101. The correct application number should be 10/028010.

## *Claim Objections*

Claims 4 and 16 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

As per claim 4, claims 1-3 disclose a file system. Claim 4 discloses a "file system interface", and fails to limit the subject matter of "file system" because it was not present in the claim.

As per claim 16, claim 1 discloses a file system. Claim 16 discloses a "method" and fails to fails to limit the subject matter of "file system" because it was not present in the claim.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 15-22, 24, 28-38, 46-52, and 54-55 are rejected under 35 U.S.C.

103(a) as being unpatentable over Row et al. – hereinafter Row - (US 5,802,366) in

view of Philbrick et al. – hereinafter Philbrick - (US2001/0037406).


As per claim 1, Row discloses a file system on a computer handling read and

write requests to a SAN-attached storage device comprising:

c) a remote component that communicates with the NAS server over a local area

network; (Col 12 lines 39-49)

d) an upper level component that communicates with application programs, the

upper level component submitting all write requests to the remote component and

submitting at least some read requests to the local component. (Col 6 line 58 – Col 7

line 11, Col 10 lines 17-32, Col 20 lines 36-44)

Row et al. fails to disclose a local component and a NAS server which

communicates with the SAN. Philbrick discloses

a) a local component that communicates with the SAN-attached storage device

over a storage area network; ([0044])

b) a NAS server that communicates with the SAN-attached storage device over a

storage area network; ([0009])

At the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to disclose a local component and a NAS server which

communicates with the SAN in the disclosure of Row. The motivation for doing do

would have been to read or write data on host storage unit ([0044])

As per claim 2, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein each of the components are separate file systems in which the upper

level component file system is layered above the local component file system and the

remote component file system.  (Col 6 line 58 – Col 7 line 11)


As per claim 3, Row / Philbrick disclose the file system of claim 2, and Row

discloses utilizing an installable file system interface to facility layering between the file

systems.  (Col 10 lines 10-16, Col 11 lines 12-17)


As per claim 4, Row / Philbrick disclose the file system interface of claim 3, and

Row discloses the file system interface is the Virtual File System interface. (Col 11 lines

12-17)


As per claim 5, Row / Philbrick disclose the file system of claim 2, and Row

discloses wherein the remote component file system utilizes a protocol chosen from

among the following set: Network File System, Server Message Block, and Common

Internet File System.  (Col 6 line 58 – Col 7 line 11)


As per claim 6, Row / Philbrick disclose the file system of claim 1 and Row

discloses wherein the upper level component and the local component are merged into

a single file system, and further wherein the remote component is a separate file system

layered under the single file system containing the upper level and local components.
(Col 6 line 58 – Col 7 line 11)

    As per claim 7, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein the upper level component submits all read requests to the local

component.  (Col 6 line 58 – Col 7 line 11)

    As per claim 8, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein the upper level component submits read requests above a certain

size to the local component, and read requests below the certain size to the remote

component.  (Col 13 line 64 – Col 14 line 13)

    As per claim 9, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein the upper level component submits read requests to the local

component if the file size is above a certain size, and the upper level component

submits read requests to the remote component if the file size is below the certain size.
(Col 13 line 64 – Col 14 line 13)

    As per claim 10, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein the upper level component submits all read request to the local

component except where the local component is not capable of properly retrieving data

requested in the read request, in which case the upper level component submits the

read request to the remote component. (Col 13 line 64 – Col 14 line 13)


As per claim 15, Row / Philbrick disclose the file system of claim 1, and Row

discloses wherein the file system is capable of handling additional file requests, with file

requests that alter data on the SAN-attached storage device being treated similar to the

write requests, and file requests that do not alter data on the SAN-attached storage

device being treated similar to the read requests. (Col 20 lines 21-45, Col 21 lines 12-

26)


As per claim 16, Row / Philbrick disclose the method of claim 1, and Row

discloses further comprising a file server component capable of receiving and

responding to file requests from other computers that are connected to the local area

network but not connected to the storage area network. (Col 8 lines 18-33, Col 8 lines

47-57, Col 9 lines 64-67)


As per claim 25, Row / Philbrick disclose the network of claim 24, and Row

discloses wherein the SAN-attached device is a single logical device comprised of

multiple physical devices. (Col 26 lines 25-38)

As per claim 26, Row / Philbrick disclose the network of claim 24, and Row discloses wherein the server computer is comprised of multiple physical computers operating as a single logical server cluster.  (Col 26 lines 25-38)

As per claims 17-22, 24, 28-38, 46-52, and 54-55, please see the discussion above as it relates to the same rationale and subject matter.

Claims 11-13, 23, 39-41 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Row (US 5,802,366) / Philbrick (US2001/0037406) in view of Gregerson  (US 5,758,342)

As per claim 11, Row / Philbrick disclose the file system of claim 10.  Row fails to disclose retrieving data by comparing modification times for a file.   Gregerson discloses wherein the upper level component determines whether the local component is capable of properly retrieving data requested in the read request by comparing modification times for a file indicated in the read request as retrieved from the remote component and the local component.  (Col 2 lines 51-67)  At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to retrieve data by comparing modification times for a file in the disclosure of Row.  The motivation for doing do would have been to determine the most current file (Col 2 lines 51-67)

As per claim 12, Row / Philbrick / Gregerson disclose the file system of claim 11, and Row fails to disclose retrieving data by comparing modification times for a directory. Gregerson discloses further wherein the upper level component determines whether the local component is capable of properly retrieving data requested in the read request by comparing modification times for a directory indicated in the read request as retrieved from the remote component and the local component. (Col 5 lines 48 – Col 6 line 14) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to retrieve data by comparing modification times for a directory in the disclosure of Row. The motivation for doing do would have been to see if the file has to be written to is on the storage disks. (Col 5 lines 48 – Col 6 line 14)

As per claim 13, Row / Philbrick / Gregerson disclose the file system of claim 12, and Row discloses wherein the directory modification times are compared during a lookup function, with the results stored in an inode structure for the higher-level component. (Col 6 line 58 – Col 7 line 11, Col 19 lines 30-38)

As per claims 23, 39-41, and 53, please see the discussion above as it relates to the same rationale and subject matter.

Claims 14 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Row (US 5,802,366) / Philbrick (US2001/0037406) / Gregerson (US 5,758,342) in view of Henson et al. – hereinafter Henson - (US 5,202,971)

As per claim 14, Row / Philbrick / Gregerson disclose the file system of claim 13, and Row fails to disclose pointing file vnode for local and remote components and local and remote modification time. Henson discloses

a) a handle pointing to a file vnode for the remote component; (Col 13 line 51 – Col 14 line 2)

b) a handle pointing to a file vnode for the local component; (Col 13 line 51 – Col 14 line 2)

Gregerson discloses

c) a remote modification time indicating the modification time returned by the remote component; and (Col 2 line 51 – Col 3 line 7 , Col 3 line 26 – Col 3 line 67)

d) a local modification time indicating the modification time returned by the local component. (Col 3 line 26 – Col 3 line 67, Col 3 line 26 – Col 3 line 67)

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose pointing file vnode for local and remote components and local and remote modification time in the disclosure of Row. The motivation for doing do would have been to to determine the most current file (Gregerson, Col 2 lines 51-67) and to allow the inode to be represented in the file system (Col 9 lines 45-50).

As per claims 42-45, please see the discussion above as it relates to the same rationale and subject matter.
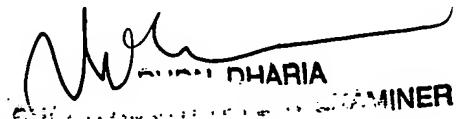
## *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are disclosed in the Notices of References cited page and teach numerous ways of implementing a storage area network file system. A close review of these references is recommended.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag R. Patel whose telephone number is (571)272-7966. The examiner can normally be reached on Monday to Friday from 7:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

DHARIA
MINER